

Notice of Allowability

Application No.

10/600,344

Applicant(s)

ITOH ET AL.

Examiner

Art Unit

TAN N TRAN

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 08/18/04.
2. ☒ The allowed claim(s) is/are 1-11.
3. ☒ The drawings filed on 08/18/04;06/23/03 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

ck minhloan tran
Minhloan Tran
Primary Examiner
Art Unit 2826

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kurt M. Berger on 10/15/04.

The application has been amended as follows:

Cancel the non-elected claims 12-19.

Reasons for Allowance

2. The following is an examiner's statement of reasons for allowance:

Claims 1-11 are allowable over the reference of record because none of these references disclose or can be combined to yield the claimed invention such as an MIS transistor having a gate insulating film formed on at least a portion of the surface of the substrate which is interposed between the source region and the drain region within the trench as recited in claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled ""Comments on Statement of Reasons for Allowance.

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chang et al. (6,486,028) discloses a semiconductor device comprising: a semiconductor substrate 100 having a trench formed in a surface of the semiconductor substrate 100; and a transistor including source/drain regions (104,106) formed to face the surface in the semiconductor substrate 100 wherein drain region formed apart from the source region on an opposite side of the trench, and a gate electrode 116 formed on the gate insulating film (110,112,114) to within the trench. (Note fig. 6 of Chang et al.), but Chang et al. does not disclose an MIS transistor having a gate insulating film (110,112,114) formed on at least a portion of the surface which is interposed between the source and drain regions (104,106) to within the trench.

4. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tan Tran whose telephone number is (571) 272-1923. The examiner can normally be reached on M-F 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for after final communications.

Application/Control Number: 10/600,344
Art Unit: 2826

Page 4

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

TT

Oct 2004